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ABSTRACT

Several dimensions of state-sponsored, reduced-class-size programs are addressed. At present, 20 states are contemplating following the lead of Indiana's PRIME TIME and Tennessee's STAR programs. Yet the effectivenessness of reduced class size in elementary schools continues to be uncertain and controversial. No one knows whether reduced class size has an impact on student success. Discussion in this report addresses the issues of: (1) who wants class size reductions, who doesn't, and why; (2) what research really says about small classes; (3) whether reduction of the size of classes can realize its potential; (4) alternatives to reduction of class size; (5) hidden costs of reductions; (6) likely long-term effects; and (7) the need for further research on the effects of class size reduction programs. (RH)

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WHY STATE SPONSORED REDUCED CLASS SIZE PROGRAMS AREN'T WORKING

A Qualitative Research Study

by

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State sponsored reduced class size programs have been received with great enthusiasm by teachers and parents. No fewer than twenty states are contemplating following the lead of Indiana's PRIME TIME and Tennessee's STAR. Yet the effectiveness of reducing class size in elementary schools continues to be controversial. The truth of the matter is that nobody knows or seems to care whether reducing class size has any impact on student success.

As other states attempt to reduce class size it may be well for them to reflect on some of the phenomena that have occurred in Indiana and Tennessee. Since neither of these early class size reduction programs have been based on research or theory, following these leads might be considered as the blind leading the blind. Some unexpected developments have occurred in the initial experiments with reduced class size that suggest caution is necessary when they are implemented.

Farr, Quelling, Besel, and Johnston (1987) compared scores on the Indiana Competency Test for two groups of third grade students in 1128 schools. In 853 schools, students experienced reduced class sizes in grade one to three. In 242 schools, students experienced PRIME TIME in grades one to two and 33 had classes reduced in size for only the first grade. Farr et al concluded that extending PRIME TIME to third grade classes had no significant effect for either reading or mathematics.

Another analysis of Indiana's state wide competency test was conducted by

Malloy and Gilman (1987) who analyzed data from the Department of Education Division of Research and Assessment. Malloy compared the mean scores of 65,911 students who had not experienced class size reduction with the mean scores of 67,973 third graders who had been enrolled in Indiana schools during grades one, two, and three of PRIME TIME. Malloy's results show a negligible increase from 118.0 to 118.7 on the composite of four test scores. Both reading and mathematics increased 1.0 points while writing decreased 1.0 points.

Two studies compared the results of three years of a reduced class size program in a school system in Indiana. Gilman, Tillitski, Swan, and Stone (1987) compared scores on the Iowa Test of Basic Skills for the third grade students who were in the previous year with third graders who had experienced class size reduction. The authors concluded that all subtests (reading, math and composite) showed that grade 3 test scores actually decreased when class size was reduced. The authors concluded that many earlier gains which favored small classes in grades one and two disappeared in grade 3.

To control for students who had left or entered the school district while reduced class size programs were being implemented, Gilman, Tillitski, Mohr, and Stone (1988) conducted a cohort study which compared mean Iowa Test of Basic Skills scores of third grade students who were in the school district for all of grades one, two, and three. Again, students in reduced size classes were compared with students who experienced no reductions. In spite

of gains for the reduced size classes, no significant gains were found for students in the smaller classes. These findings tended to support the ERS (1980) findings that the positive effect of class size reduction on academic achievement may be limited to the early primary grades.

Who Wants It, Who Doesn't, and Why?

Parents, teachers, administrators, teacher's unions, and politicians are all affected by class size reductions but who are the driving forces behind this movement and what are their motivations? Is class size reduction a priority for parents? Do parents feel that smaller classes will automatically lead to better more concerned teachers who will be more effective with their children? Recent research indicates that parents do, in fact, believe smaller classes are important for their childrens' learning (Chase, Mueller & Walden, 1986). Eighty percent of the parents surveyed in Indiana indicated that they considered smaller classes an important factor in education. Are parents eager or even willing to pay for this? In Indiana some of the parents were very resentful when their children had to remain in a large size class while their neighbors' children were assigned to smaller ones. However, at the same time, local referenda to pay for smaller classes were usually voted down at the polls. Parents were eager to put their children in smaller classes, but they were reluctant to pay for

smaller classes through increased taxes.

Naturally, teachers are in favor of having fewer students to teach. A typical teachers' reaction is "I don't care whether it's working or not, I'm for it." As class size reduction programs have flourished, the teacher unions have championed their causes. Unions now view class size reduction as a technique to increase union membership and strength and to improve working conditions. The current union view is that smaller classes are a way to teach better, but also use the issue as a tool for union victories.

Thus class size serves as a smokescreen to draw attention away from matters that really do improve education. According to some research studies, teacher competence, teaching style, and practices of the teacher are the principal factors related to student success, and the number of students in the classroom is not a significant factor. (Educational Research Service, 1980). Teacher's salaries are major concerns for teachers and unions alike, but as class size reduction gains momentum and support, it seems unlikely that salaries will be increased significantly. In Indiana, for example, the annual cost for PRIME TIME is $190 million per year. How can teachers realistically expect their state budgets to support that figure and also to raise salaries for an increasing number of educators?

Administrators are also faced with new challenges that accompany smaller classes. Administrators are told that they must be an "educational

leader" and not a "paper clip counter." Now, through class size reduction, administrators are forced to hire, inspire, motivate, challenge, and confer with an ever increasing staff. Of course this is in addition to other routine paper shuffling activities that prevent them from being educational leaders.

Given the current realities in the field of education it is likely that administrators will be forced to hire teacher candidates who are less than qualified. Many experts have written about the brain drain in the field of education. The best candidates are often lured into other fields that offer better salaries and opportunities. There are also fewer teacher candidates in general and fewer still who are willing to teach in inner city areas. With smaller classes, there will be an increased need to hire more teachers and consequently many less competent teachers will probably become employed by the public schools.

Education is often compared to the field of business. Many educational leaders often profess that schools should operate more like businesses, with administrators likened to middle managers. If this were the case, what business would pour tremendous amounts of money into a product or system without some expectation of a return on their investment? Long term and short term goals would have been developed. Successful businesses often sacrifice short term goals with the expectations of higher returns in productivity and/or profit in the long term. A dollar invested is expected to return $1.25 in a specified period of time. Not so in education. Millions have been

plowed into the reduction of class size without goals or expectations of return. Without any evidence of cost effectiveness, reducing class size by even a small number is bound to be a very costly endeavor.

Politicians have championed class size reduction for a variety of reasons. First, some believe that the results of smaller classes will be clear cut academic benefits in the form of higher achievement test scores. Others seek to be identified with a pro-education stance and supporting smaller classes gives them that label. Others may see the movement for smaller classes as a way to cultivate both the teacher and the parent vote. In Indiana, for example, PRIME TIME was proposed by one political party but has never been challenged by the other. Both political parties have favored smaller classes without reservation and neither party has been concerned with past or present research findings concerning class size.

What Does Research Really Say?

If gains are found, are they substantive changes merely due to the artifacts of novelty or teacher expectations? Where small classes exist, they are frequently accompanied by increased accountability, a better articulated curriculum, a narrower focus of instruction, greater teacher expectation, and an avowed teacher preference. Do these practices account for gains rather than the smaller classes?

Research studies on class size date back as far as 1900. The question, "Are smaller classes better?" has been a significant issue for teachers,

parents, and administrators since that time. The common sense answer has been that, "Smaller is better."

There are several reasons that common sense would suggest that smaller is better. Gilman, Swan, and Stone (1987) have categorized these reasons as:

1. Teachers would have the energy and interest to give more concerned care and attention to each child if there are fewer in the classroom.
2. Classroom management is more effective when teachers spend more time with each student and keep track of individual progress.
3. Teachers will be able to employ a wider variety of instructional strategies, methods, and learning activities and can be more effective with them when class size is small.
4. Teachers' attitudes and morale are more positive when they have fewer students.
5. Small class size makes good use of added time and space.
6. Teachers will be able to find more time to plan, diversify, and individualize their teaching. When teacher attention, energy, and time are shared among fewer students, the environment will be more conducive to learning.

A survey of the research done on the effects of class size on achievement concluded that "the relationship between class size and achievement has been inconclusive as some studies have favored smaller

classes, some larger, and others have found no relationship between the two variables (Educational Research Service, 1980). In contrast, a widely publicized study by Smith and Glass (1979) concluded that there was a significant negative relationship between class size and student achievement regardless of grade levels, subject areas, and ability ranges. The study went so far as to predict how achievement might vary with class size. However, the validity of their conclusions is questionable. Their conclusions are generalized from the results of a variety of studies on class size carried out by different methods under different conditions and using different criteria for measuring achievement of students.

An evaluation of the study by Smith and Glass conducted by the Educational Research Service (1980) concluded that "the effects of class size on pupil achievement across all grade levels are contradictory and inconclusive." Other studies by Shapson et.al. (1980) and Cacha (1982) concluded that "Smith and Glass had made bold generalizations that were not supported by any test of significance."

It is often the case that common sense may not necessarily be correct. This could be the case with the reduction of class size. Common sense suggests that reducing class size will pay off by improving the quality of education. Research results indicate that reducing class size may improve the quality of education and it may not. The results are mixed and as such confound our common sense answer. As is the case in most controversies, there

are many opinions and speculations why small size does not produce uniformly positive results. Some of these are:

1. What occurs in classes (beliefs and capabilities of the teachers, abilities and backgrounds of the pupils, subject matter, etc.) has a greater effect on achievement than class size per se (ERS, 1980).
2. Many educators believe that class size must be very small (below 14) before any dramatic increase in achievement will appear (Glass, Cahan, Smith, and Filby, 1979).
3. Few, if any, pupil benefits can be expected from reducing class size if educators continue to use the same instructional methods and procedures in smaller classes that they used in larger classes (Hallinan and Sorensen, 1985).
4. Teachers' styles dictate the extent to which individual attention is given to each student, and most teachers do not take advantage of the small class to individualize instruction. (Cacha, 1982).
5. Reduced class sizes in the primary grades may increase teacher dependence and reduce self discipline. The effect of this could be serious for students who must attend larger classes in later grades.
6. A typical finding in studies involving class size is that there are no significant differences in achievement of large versus small classes (Educational Research Service, 1980).
7. To assign all teachers in a school system to classes of less than

20 students would be very expensive.

8. Teaching alternatives (aides, split schedules, etc.) have not been demonstrated to be effective in practice and are used when calculating reduced clsass size ratios (Shapson et. al., 1980; Down, 1979).

9. Instructional effectiveness is more dependent on the teacher than on class size.

10. Financial costs and their political consequences make the class size reduction alternative prohibitive.

It is important to note two more significant factors that may be confounding the research results. First, Department of Education officials in some of the early class size reduction programs have been extremely reluctant to have their programs evaluated in a statewide study. Contracts for such studies have been abruptly cancelled. The principal focus of evaluation efforts have been the subjective observations of classroom activities in carefully selected school systems by evaluators who were carefully controlled. Many present evaluative models concentrate on the observation of input variables, such as the amount of teacher attention students receive or the amount of student recitation time. State wide studies, though, would be more reliable and valid. As such they should generate more uniform results.

Second, teachers understand that students are supposed to perform better in smaller classes. If improvement does not occur, teachers may receive the punishing effects of being evaluated as a poor teacher and

teaching larger classes. The results of recent research in Indiana indicated that teachers, after the implementation of PRIME TIME, do, in fact, feel "significantly" more pressure to increase student performance (Chase, Mueller & Walden, 1986). This places teachers in a difficult situation. They can look like effective teachers only if they make the smaller class appear successful. What do test gains in class size research actually measure? Do they measure the effects of lower teacher-student ratios or do they measure the effect of career pressure on teachers?

Can It Realize Its Potential?

Most teachers have not learned that effectively teaching a small class is not necessarily easier than teaching a larger one. Their teaching style should adjust to the smaller classroom. Nevertheless, most teachers teach the way they were taught. Studies have shown that even when class size was reduced to 11, teachers used the same methods as with larger classes (Hallinan and Sorensen, 1985; Cacha, 1982). Experiences with state sponsored reduced class size programs have shown that teachers used substantially the same teaching methods before and after the change in class size.

The increase in instructional time per student gained by having fewer of them in small classes may be rather negligible. Studies have shown that schools spend less than thirty percent of the average school day in learning activities. Over fifty percent of classroom time is wasted, even if the time

is scheduled for instruction the students were not on task (Gilman and Knoll, 1984).

The question remains, "How will the extra time resulting from smaller classes be utilized?" In one Indiana school, smaller classes permitted a teacher to finish her regular curriculum two weeks before the end of the school year. This resulted in a two week period for which no instruction had been planned. The teacher and her students spent this time rehearsing for a PRIME TIME circus, in which the children dressed as animals and sang songs. From this example it is evident that reducing class size does not automatically result in more instructional time.

What are the Alternatives?

Where actual class size reduction is not possible because of space or personnel factors, alternatives are often utilized. Among them are the use of teacher aides and split scheduling. In practice, neither of these methods has proven effective in the elementary classroom (Shapson et. al, 1980; Down, 1979). In many cases, aides have been untrained or were selected as a result of a political favor rather than because of talent or ability.

Sometimes introducing an aide into the classroom creates personality problems between the teacher and her assigned aide. This can dramatically lower student achievement.

What are the Hidden Costs?

In addition to the significant salary costs for more teachers, there are other costs. There are long term requirements for additional space, equipment, utilites, materials, the indirect cost of teacher benefits, and administration. In a recent survey, principals ranked physical plant problems as the number one disadvantage of reduced class size programs (Chase, Mueller & Walden, 1986).

Space requirements are particularly critical. As more grades become involved in reduced class size programs, improvisation must be made. Often new construction is impossible, impractical, or not a viable alternative. Reduced class size programs have been funded on a year to year basis which has caused good planning to be very difficult.

The building needs and requirements of reducing class size have created severe problems in many elementary schools. Administrators are forced to make difficult decisions and sometimes have found it necessary to displace art, music, and special education teachers from their classrooms. Displaced classes often times must meet in noisy areas of the school, such as the cafeteria or the stage of the gymnasium.

At the same time, more teachers are desiring to teach fewer students. Teachers of intermediate grades and English teachers are among the first to complain about inequality of class size. Teachers of smaller classes often experience the resentment of teachers who must continue to teach larger

classes.

What will be the Long Term Effects?

One theory gaining some acceptance is that smaller class size programs can be detrimental to students in the long run. Children who are enrolled in small classes during their primary years may become inordinately teacher dependent. When these children are placed in large classes in future years, they may be unable to receive the amount of attention they have come to need and expect.

As a result, their ability to learn in later years and in large classes may be hampered.

What is the Bottom Line?

In appraising the results of reduced class size programs, it appears this is another educational bandwagon ready to take off. Perhaps before more states invest billions of dollars reducing class sizes, studies should be conducted to ensure that this is a sound educational investment. There needs to be a determination of whether class size reduction programs have a positive impact on education or cause a possible negative energy drain in addition to being very expensive.

Could the money be better spent? Nobody seems to be asking these questions. Indeed, the educational masses seem to be safisfied with whatever "answer" class size reductions seems to be providing. It may well be that its

time has come, but unless parents, teachers, administrators, and politicians begin to ask questions and seek answers to these and other educational concerns, this may be yet another of a plethora of unsuccessful educational bandwagons.

Many questions remain to be answered in the dilemma concerning how successful reduced class size programs will be and whether their continuation will be assured. The answer seems to be a positive one, because among politicians, teachers, and parents, the popularity of class size reduction will probably cause smaller classes to be the trend for years to come. Politicians, teachers, and parents are not asking questions and nobody else seems to notice ... or care ... whether reducing class size is a cost effective and beneficial advantage or a meaningless administrative exercise.